



The Commonwealth of Massachusetts

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

BAY STATE GAS COMPANY **D.T.E. 05-27**

SECOND SET OF INFORMATION REQUESTS OF THE DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY TO THE COMPANY

Pursuant to 220 C.M.R. § 1.06(6)(c), the Department of Telecommunications and Energy ("Department") submits to Bay State Gas Company ("Company") the following Second Set of Information Requests for response within ten days of issuance:

- DTE 2-1 Refer to Exh. BSG/JLH-3. Please discuss whether the method of estimating the marginal distribution capacity cost complies with the Department's directives set in Fitchburg Gas and Electric Light Company, D.T.E. 02-24/25 (2002) and Boston Gas Company, D.T.E. 03-40 (2003). Specifically, please answer the following questions:
- (A) Are the time series data used no less than 30 years in length?
 - (B) Has the Company used multiple variable regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation;
 - (C) Are the appropriate tests and remedial procedures for multicollinearity, heteroskedasticity, and autocorrelation performed and presented? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation;
 - (D) Has the Company tested and presented alternative functional forms (e.g., linear, logarithmic, parabolic, or other) of regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation; and
 - (E) Has the Company determined the shape and location of the marginal cost curve to provide and assessment of whether the distribution costs exhibit increasing, constant, or decreasing returns to scale? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation.

DTE 2-2 Refer to Exh. BSG/JLH-3. Please discuss whether the method of estimating the marginal capacity-related production expenses complies with the Department's directives set in Fitchburg Gas and Electric Light Company, D.T.E. 02-24/25 (2002) and Boston Gas Company, D.T.E. 03-40 (2003). Specifically, please answer the following questions:

- (A) Are the time series data used no less than 30 years in length?
- (B) Has the Company used multiple variable regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation;
- (C) Are the appropriate tests and remedial procedures for multicollinearity, heteroskedasticity, and autocorrelation performed and presented? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation; and
- (D) Has the Company tested and presented alternative functional forms (e.g., linear, logarithmic, parabolic, or other) of regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation.

DTE 2-3 Refer to Exh. BSG/JLH-3. Please discuss whether the method of estimating the marginal capacity-related transmission and distribution expenses complies with the Department's directives set in Fitchburg Gas and Electric Light Company, D.T.E. 02-24/25 (2002) and Boston Gas Company, D.T.E. 03-40 (2003). Specifically, please answer the following questions:

- (A) Are the time series data used no less than 30 years in length?
- (B) Has the Company used multiple variable regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation;
- (C) Are the appropriate tests and remedial procedures for multicollinearity, heteroskedasticity, and autocorrelation performed and presented? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation; and
- (D) Has the Company tested and presented alternative functional forms (e.g., linear, logarithmic, parabolic, or other) of regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation.

DTE 2-4 Regarding the Company's marginal cost study (see Exh. BSG/JLH-3). Please discuss whether the method of estimating the marginal customer-related operating expenses complies with the Department's directives set in Fitchburg Gas and Electric Light Company, D.T.E. 02-24/25 (2002) and Boston Gas

Company, D.T.E. 03-40 (2003). Specifically, please answer the following questions:

- (A) Are the time series data used no less than 30 years in length?
- (B) Has the Company used multiple variable regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation;
- (C) Are the appropriate tests and remedial procedures for multicollinearity, heteroskedasticity, and autocorrelation performed and presented? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation; and
- (D) Has the Company tested and presented alternative functional forms (e.g., linear, logarithmic, parabolic, or other) of regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation.

DTE 2-5 Refer to Exh. BSG/JLH-3. Please discuss whether the method of estimating the marginal distribution capacity cost complies with the Department's directives set in Fitchburg Gas and Electric Light Company DTE 02-24/25 and Boston Gas Company DTE 03-40. Specifically, please answer the following questions:

- (A) Are the time series data used no less than 30 years in length?
- (B) Has the Company used multiple variable regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation;
- (C) Are the appropriate tests and remedial procedures for multicollinearity, heteroskedasticity, and autocorrelation performed and presented? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation; and
- (D) Has the Company tested and presented alternative functional forms (e.g., linear, logarithmic, parabolic, or other) of regression equations? If yes, please provide all workpapers, calculations, formulas, assumptions and supporting documentation.

DTE 2-6 Please state whether or not Mr. James L. Harrison was responsible for performing the Marginal Cost Study in the Fitchburg Gas and Electric Company, D.T.E. 02-24/25 (2002). If yes, please discuss in detail how the present Marginal Cast Study differs from the study filed in D.T.E. 02-24/25.

DTE 2-7 Please estimate the marginal cost of all the expense categories (and update the marginal cost study) following the Department's directives set in Fitchburg Gas

and Electric Light Company, D.T.E. 02-24/25 (2002) and Boston Gas Company, D.T.E. 03-40 (2003). In addition, please:

- (A) Define all the variables used in the marginal cost study and explain how the data corresponding to those variables were derived. If applicable, discuss what accounts and subaccounts (according to the Uniform System of Accounts for Gas Companies) were used to derive the time series data;
- (B) Provide on disk in Excel format all data and supported formula used in the estimation of the marginal cost study; and
- (C) For each expense category, present a graph showing the relationship between the dependent variable and time with the dependent variable on y-axis (vertical axis) and time on the x-axis (horizontal axis). Please provide an explanation of the trend.

DTE 2-8 Please refer to Exh. BSG/JLH-3, at 17-18. The Company states that since the merger, some of the customer accounting and marketing efforts formerly performed by Bay State personnel have been undertaken by NiSource personnel and billed back to Bay State as an Outside Service Expense in Account 923. In this regard, please:

- (A) Explain how those expenses, currently in Account 923, are captured in the Marginal Cost Study;
- (B) Discuss what econometric techniques the Company has tried to incorporate the effects of the merger on the customer accounting expenses. Please provide all workpapers, calculations, formulas, assumptions and supporting documentation; and
- (C) Discuss why the Company decided to use only the last two years worth of data, dismissing the information (the relationship between level of expenses and number of customers) carried from 1976 to 2002.

Dated: May 13, 2005